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ON THE RELATION BETWEEN THE RESPIRATORY AND CIRCULATING FUNCTIONS.

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[Communicated for the Boston Medical and Surgical Journal.—Concluded from page 266.]

**2ND. Remedies which excite and invigorate the motor respiratory nerves.**

Articles generally which produce sudden cerebral excitement and mental exhilaration have this effect. *Ether, camphor, ammonia, musk, castor, assafetida, oil of amber, cajeput oil*, and the volatile terebinthines, such as *turpentine oil* and that of the *pinus Canadensis*, belong to this class. These remedies are commonly termed *diffusible stimulants*; but, with the exception of the volatile terebinthines, they have little, if any, direct stimulant operation on the heart. Their main operation is on the nervous system. They produce *cerebral excitement*, relieving drowsiness, coma, and low delirium, and in virtue of this operation they call the aid of the will to assist in respiratory action; and at the same time they appear to have a direct *exciting operation on the respiratory nerves*. In the low stages of typhous and typhoid fevers, when the respiration and the cerebral functions are oppressed, they quicken the respiration, and thus tend to relieve coma, delirium, sub-sultus tendinum, and other symptoms of nervous oppression. They are especially useful about the time of the crisis of fevers, particularly the crisis of pneumonitis and other diseases of the respiratory organs. Their operation is ordinarily transient; but the frequent use of these various articles, in succession, is highly important in sustaining the nervous energy and the respiratory action, through the critical period of such diseases. Whenever in the progress of typhous or typhoid fevers, the respiration is observed suddenly to become infrequent, these remedies should be promptly and perseveringly employed to quicken the respiration and prevent the deadening influence of the black blood through the system.

Dr. Graves highly recommends this class of remedies, in cases "when there is great prostration of the powers of life, oppression of the nervous functions, and low, muttering delirium;" and a remark of his in regard to musk, that "it exercises a stimulant effect on the nervous system, without having any tendency to produce cerebral congestion or coma," is applicable, in general, to other remedies of this class. Indeed,

the practice of giving these remedies, for the relief of such symptoms, is common; but the rationale of the practice, and the leading principle, that coma and other symptoms of cerebral oppression are commonly owing to imperfect respiration, have not been generally understood.

*Enemata* of some of the articles above enumerated—particularly of camphor and turpentine oil—sometimes operate very promptly to relieve oppression of the respiratory and cerebral functions.

*Coffee and green tea* are mild but valuable remedies of this class. I think that injury is often done to persons who habitually use these articles in health, by withholding them during sickness. In typhous fever, typhoid pneumonitis, and many other diseases, their remedial efficacy, in producing cerebral excitement, and in quickening the respiration, is important. The use of strong tea in cases of stupor occasioned by excessive doses of opium or alcohol, is common.

*External vesicatories and irritants*, such as cantharis, nitrate of silver, corrosive sublimate, mustard, oil of turpentine, oil of cinnamon, and the like, are valuable adjuvants in such cases. A blister applied to the back of the neck is one of the most common remedies for coma and other symptoms of cerebral oppression; and probably irritants applied in this region, from its proximity to the origin of the respiratory nerves, are more effectual than to other parts of the system. Dr. Graves prescribes blisters with this view; and in some cases of typhus, I think I have seen good effects from continued irritation in this region, excited by a pitch plaster, with a small quantity of pulverized nitrate of silver sprinkled on its surface.

*Calling the attention of a patient to his respiration*, and prompting him to take frequent full inspirations, tends to keep up the process of aeration, and prevent the patient from sinking into a comatose condition. I am always careful, about the sixth day of pneumonitis, to watch the symptoms of an approaching crisis. If the symptoms of deficient arterialization are increasing, as always occurs when the crisis is likely to prove serious, I perseveringly employ the diffusible excitants above mentioned, apply a blister or other irritant to the back of the neck, and whenever the respiration flags I arouse the patient to the necessity of full and frequent inspirations. I remain by the patient, until a nurse or other attendant has learned this mode of management, which in some cases is required to be continued for several hours. By this management I have seen patients sustained through the critical period of this disease, who otherwise almost certainly would have sunk into a fatal asphyxia.

It is well known, that in a low typhous or typhoid state, it is necessary that a patient, who inclines to sleep, should be frequently aroused. In natural healthy sleep the respiration is ordinarily slower and less frequent than during wakefulness. The ratio between the respiration and the pulse ordinarily becomes 1 to 5 or 5½. The aid of the will is withdrawn, and the breathing is performed wholly by the involuntary respiratory nerves. In low typhous fevers the disparity during sleep becomes still greater. While awake a patient feels those distressing sensations, which attend imperfect aeration of the blood, and which instinctively

demand the aid of the will to assist the torpid and enfeebled respiratory nerves and muscles ; but during sleep, the aid of the will being withdrawn, the breathing becomes irregular, intermitting, short, and infrequent—a breathing which in this diseased condition would soon overwhelm the system with asphyxia.

But in spite of all our efforts, the respiration sometimes flags, and patients sink into a comatose sleep, from which, for a time, they cannot fully be awaked. Our efforts still should be continued ; if the patient is able to swallow, the most diffusible excitants, ammonia, ether, camphor, &c., should be administered little diluted, so as to make a strong impression on the mouth and fauces ; or the same substances should be applied to the nostrils, or sprinkled on the face. These means, with perhaps the aid of frictions over the chest, if they do not awake the patient, will generally arouse the system enough to occasion several successive full inspirations. I recently saw a little patient recover from a coma succeeding scarlet fever, during which, for about three days, the breathing absolutely stopped, whenever these means were discontinued even for a few minutes.

In a similar way cases of profound coma consequent to large doses of opium and other narcotics, taken by accident or with suicidal purposes, have been treated successfully by *flagellation* and other violent *external irritation*. That such means prove efficacious by exciting and sustaining the respiration, may be inferred from experiments which have been made of supporting life, under the influence of enormous doses of narcotics, by artificial respiration. These experiments prove that the stupifying narcotics occasion death by suspending the respiratory motions and inducing asphyxia, rather than by a direct operation on the brain.

This general mode of treatment has been applied to extreme cases of intoxication with remarkable efficacy.

3d. *Remedies which excite and invigorate the arterializing nerves of the lungs.*

Most of the remedies above enumerated, which operate to excite and invigorate the motor respiratory nerves, have in some degree a similar operation on the organic nerves of the lungs. Such is the sympathy between these two classes of nerves, that when one of them is affected with torpor, the other is in some degree similarly affected ; and the remedies which affect one class, also ordinarily affect the other. But the effects of artificial respiration in cases of coma caused by alcohol, opium, and other stupifying narcotics, show that in these cases the torpor is principally in the brain and motor respiratory nerves. On the other hand nervous asthma, malignant cholera, and some other diseases, are instances in which the torpor is chiefly in the organic nerves, while the brain and respiratory nerves are comparatively little affected.

These circumstances afford grounds for a distinction of two classes of remedies. The class above treated of operates principally on the motor respiratory nerves. The remedies next to be considered appear to operate principally on the organic nerves, though some of them have also an evident operation on the motor nerves. In general this class produces a gradual and permanent increase of nervous energy, while the former class effects a sudden and more transient excitation.

Nitrate of silver, arsenical solution, chlorine, cantharis and capsicum, are the principal remedies of this class. Tetrakinitrate of bismuth, sulphate of zinc, and bisulphate of copper, have a less degree of the same operation. Mustard, and other pungent tetradynamous plants, also belong to this class.

*Nitrate of silver.*—I consider this article as one of the most valuable remedies for restoring and sustaining the balance between the respiratory and circulating functions. It commonly increases the frequency of the respiration; but it appears to operate more on the organic nerves.

My common dose is gr. 1-8, in pill, repeated every hour, or once in two or three hours, according to the urgency of symptoms. Frequently I give a solution of the following form: *R. Nitrat. argent. gr. ij.; aquæ distillat. 3j.*—dissolve and add *syr. simp. 3vii. M.* The dose of the solution may be such as to contain from 1-8 to 1-4 of a grain. The solution is the preferable form when an effect of the remedy on the fauces is desirable, as in scarlet fever, and some other diseases; and it is ordinarily more easily administered to children than the pill.

In typhous and typhoid fevers, in which a failure of the respiration is a source of no inconsiderable part of the danger to be apprehended, I place much reliance on this remedy. Infrequent respiration, abdominal tympanitis,\* apthæ, subsultus tendinum, and coma—symptoms which are commonly associated in typhus—are some of the most prominent particular indications for its exhibition. Commonly, however, I commence its use as soon as any degree of deficient respiration is observed, and continue it through the whole course of the disease. When there is a great degree of deficient respiration, and the disease has decidedly the congestive form, with urgent symptoms of oppression of the respiratory and cerebral functions, bleeding, antimony, the diffusible excitants, or other remedies, which more promptly relieve such symptoms, are required; but to prevent these symptoms, to relieve them when moderate in degree, and to sustain the respiratory function when restored from a state of depression, I have found no remedy more efficacious than nitrate of silver. The intestinal hemorrhage, which often occurs in the course of typhus, I have almost invariably observed associated with tympanitis, and with the subsidence of the tympanitis, which this remedy is almost sure to effect, the hemorrhage has always ceased.†

In delirium tremens this remedy contributes much to obviate the imperfect respiration, which was noticed, in a former part of this essay, as a prominent symptom of the disease. It relieves also the tremor, false vision, and other symptoms of nervous disorder. These effects are some-

\* For my first hint in regard to the efficacy of nitrate of silver in obviating tympanitis, I am indebted to Dr. Lester Keep, of Fair Haven, in this county.

† In the use of nitrate of silver, the greatest caution is requisite in regard to chemically incompatible remedies. Most authors complain of the uncertain operation of this remedy; and I am confident that inattention to this circumstance is a common cause of the failure of its efficacy. It is ordinarily inert, if given in connection with any alkali or alkaline salt. Ammonia or prepared chalk, for instance, wholly neutralizes its power; and the alkaline salt contained in Dover's powder frequently has this effect. A practitioner, who was formerly a student of mine, several years since complained to me that he had been often disappointed with nitrate of silver in treating typhus. On inquiry it appeared that, in connection with this remedy, he frequently prescribed a mixture containing carbonate of ammonia. Since that time he informs me that he prescribes the remedy with the greatest confidence, and that he could hardly dispense with it in the treatment of typhus.

times so obvious to attendants, when the remedy is alternately administered and withheld, that I have been often asked whether its design was to obviate the trembling.

In the treatment of typhoid pneumonitis I consider this remedy a valuable adjuvant, and in many cases I employ it through the whole course of the disease.

In phthisis the nitrate of silver has been highly recommended ; but physicians generally appear to have been disappointed in the use of it. As a curative remedy, in this disease, little can be expected from it ; though it is useful in relieving occasional symptoms, as paroxysms of dyspnoea, and the drowsiness, livid skin, and other symptoms denoting imperfect arterialization of the blood, which frequently occur in this disease.

Dyspnoea, asthma, dyspepsia, hypochondria and cholera infantum, are diseases to which this remedy is often adapted ; and in most diseases attended with general nervous torpor or irritability, or with flatulent distension of the intestinal canal, or with any of the symptoms above mentioned, as constituting particular indications for its exhibition in typhous fever, the nitrate of silver may be advantageously employed.

The following case of *erythema anatomicum*—a case of the writer's personal experience—may serve to show the general indications for which I prescribe the nitrate of silver in erysipelas, scarlet fever, and other allied diseases, as well as to illustrate some other points connected with the general subject of this essay.

In March, 1834, I one afternoon examined the body of a man who died the day previous with a malignant erysipelas affecting the face, scalp and brain. I had at the time on my left thumb two slight scratches made with a common pin a few hours previous ; and while examining the body I slightly scratched the same thumb with the point of a scalpel. They were slight abrasions of the cuticle, not sufficient to occasion the least oozing of blood. On the following morning these scratches were a little red and inflamed, attended with a slight itching and smarting sensation. I touched the thumb with a piece of nitrate of silver ; and, without apprehension of danger, proceeded to visit my patients during the forenoon. At 11 o'clock, A. M., about twenty hours subsequent to the post-obit examination, I was seized with chills, which continued violent about an hour, when heat of skin, thirst, a quick, frequent, jerking pulse, and other symptoms of irritation and febrile excitement supervened, with nausea and vomiting. There was now no irritation about the thumb, nor any inflammation extending up the arm ; and the slight injury of the thumb did not even occur to my mind as the cause of the present symptoms. An emetic of ipecac, with a small proportion of tartar emetic, produced no relief. At evening a swelling and soreness of a gland in the axilla was noticed ; and in the course of the night a vivid erythematic inflammation covered the whole left side of the chest. From this time symptoms continued severe, and with little variation until the eighth day of the disease. The pulse was ordinarily from 120 to 130, quick and jerking, but weak ; skin rather hot and dry ; the affected side painful, and so sore that friction of the bed-clothes or any slight touch seemed intolerable. But the prominent

symptom, indicated by my feelings, was a difficulty of respiration, evidently connected with affection of the organic nerves. I frequently observed to my attending physicians, that my respiration seemed to be scarcely of any service; and that the sensation was as though the breath was drawn into an inanimate bag. During occasional mental aberration I fancied that I was using a pair of borrowed lungs. The acute pain and soreness attending the disease seemed trifling as compared with this distressing, suffocating sensation. For eight days and nights I was not conscious of a moment's sleep; and when I shut my eyes they were filled with as many imaginary objects, as ever haunt the mind of a patient with delirium tremens. The general nervous irritation, the sensation of impending suffocation, and the want of sleep, were truly agonizing. The disordered function affected the motor, as well as the organic respiratory nerves; and a constant effort of the will was required to sustain the motions of respiration. With such continued effort I ordinarily made from 25 to 35 inspirations in a minute; but still the respiration was unsatisfying. During this period the nitrate of silver, in doses of one eighth or one fourth of a grain, every two or three hours, and sometimes every hour, was almost constantly employed. It rendered the respiration easier, and mitigated the general constitutional irritation; and whenever its administration was suspended for a few hours, the distress and anxiety of breathing became extreme. No other internal remedy showed decided beneficial effects. All exciting remedies appeared to fall in with the diseased irritation and aggravate it. A few drops of laudanum, or a teaspoonful of brandy, produced a distressing nervous excitement through the whole system. Two drops of the oil of valerian seemed to pervade the system with a thrilling sensation almost like electricity, increasing threefold the nervous irritation. After the disease had progressed several days, the local affection was treated with a wash of the nitrate of silver, 48 grains to 3ij. of water, so as to vesicate almost the whole left side of the chest, with a most happy effect on the local and constitutional symptoms.

I expected this state of irritation to be followed by a general nervous torpor, and apprehended danger from failure of the respiration. I directed the attention of the nurse to this subject; and told her what symptoms would require notice, and what remedies would be needed, should my consciousness and respiration begin to fail. On the eighth day the nurse observed me suddenly fallen into a state of drowsiness, with shortness and extreme infrequency of respiration. On being aroused I found a sense of torpor pervading the system; the whole lower extremities were entirely devoid of feeling; and though the sun was shining bright against my windows, a sense of darkness rendered surrounding objects scarcely visible. My attentive and judicious nurse prompted me to vigorous respiratory efforts; but such was the mental and physical torpor that respiration could hardly be continued. The skin at this time, as I was subsequently informed, assumed a deep livid hue; and, notwithstanding the assiduous exertions of attendants, my respiration occasionally sunk to ten and even eight in a minute, while the pulse was beating irregularly about 130. Ether, ammonia and camphor



were freely administered, and applied to the nostrils; and frictions with volatile liniment and oil of cinnamon were perseveringly employed. I soon revived in some degree; but for several hours the sense of darkness induced me to suppose it real night; and respiration was sustained only by constant and laborious efforts. The involuntary respiratory nerves seemed almost powerless; and for more than twenty-four hours I could not be suffered to sleep longer than two or three minutes, without nearly a total cessation of breathing. The sensations at this time were very different from those of the preceding days, when the difficulty of respiration seemed chiefly depending on the organic nerves. Then the breathing was anxious—the conscious feeling of imperfect respiration, with the exercise of reason, called for vigorous and hurried respiratory action. Now consciousness, sensation, reason and muscular energy were at the lowest ebb; the little life which remained was a burden; and the exertions of friends to arouse me seemed an annoyance. A person who has never experienced the feelings attending such a state can have no adequate idea of them. As consciousness and reason revived, I felt like one who is laboring to escape from drowning; who has been swimming for the shore, until his strength is almost exhausted; occasionally his head is suffered to sink in despair, and again the agonizing sense of suffocation calls for another desperate struggle; while every wave threatens to overwhelm the last effort of exhausted nature.

After this critical period, wine, brandy, quinine, and a moderate use of opium, operated favorably. Two abscesses formed on the posterior part of the side, each of which discharged five or six ounces of healthy pus.\* I was confined to the room in all five weeks. Much of the time there was considerable tendency to tympanitic distension of the abdomen, which was promptly relieved by more full and frequent doses of the nitrate of silver. The disordered function of the nerves concerned in respiration, which was so remarkable through the whole disease, continued in some degree even after I was able to resume the active duties of my profession. Frequently I was aroused from sleep by a sudden deep spasmodic sighing inspiration, which sometimes also affected me when awake.†

*Arsenical solution.*—It has been a matter of dispute whether this article is a stimulant to the circulating system. I am undecided whether it is directly so, or only secondarily through the influence of the arterializing function. The latter operation is certainly the most prominent; and it is therefore a valuable remedy in the congestive form of typhous and typhoid fevers. Drs. Miner and Tully recommend this article as a valuable remedy in the low stages of typhous and other fevers, when

\* Dr. Higginbottom speaks highly of the external use of nitrate of silver in promoting healthy suppuration. I have observed many proofs of the correctness of his views; and I am fully satisfied that the internal use of the remedy has a no less salutary effect in promoting this object.

† A remarkable symptom, attending the early stage of my disease, was a morbid excitation of the faculty of memory. Articles that I had read cursorily, years before, were fresh in memory, so that I could recollect not only general ideas, but almost the precise language, pages, &c., points on which my memory ordinarily is very deficient. After the critical stage of collapse, there was a proportionate failure of this faculty, the effects of which remained some time after my general health was restored. The first time I rode out, it was with difficulty and uncertainty that I could remember streets and houses with which I had been most familiar; and on several occasions I even found myself laboring to call to recollection my own name.

the general debility is attended either with irritability or torpor.—*Essays on Fevers.*

*Cantharis*, as an internal remedy, is of much value in the low torpid stages of typhous and typhoid fevers, particularly those of a congestive form, in which the respiratory function is deficient. It operates upon the nervous system generally, relieving subsultus tendinum, coma, and other symptoms of nervous exhaustion; and its effect on the nerves concerned in respiration, I think, constitutes no inconsiderable part of its favorable operation.

*Capricum* is particularly adapted to scarlet fever and erysipelatous diseases generally; but is useful in the low stages of most diseases attended with nervous torpor.

*Chlorine*.—The change which this remedy effects in the blood has been noticed by several writers, and different views have been entertained in regard to its *modus operandi*. It is useful in typhus; but more especially, I think, in scarlet fever and erysipelatous diseases. The chlorides of soda and lime are convenient forms for its administration.

*Creosote* appears to have an operation on the respiratory function, similar to that of chlorine; but, from limited experience with this remedy, I cannot speak confidently of its powers.

#### 4th. *Ventilation.*

Free ventilation is very important in cases of difficult or imperfect respiration. Its advantages are very obvious in dyspnoea and asthma, and in many cases of phthisis, pneumonitis, and other diseases.

A most injurious custom commonly prevails in many places—that of crowding the room of the sick and dying with friends and acquaintances of the patient. I would not, for slight reasons, object to a custom which to many minds appears sanctified by common association with the solemnities of death; but a custom so injurious—so murderous—as this, ought not to be tolerated. To persons in health the impure air of a crowded room often is unpleasant; and in the diseases just mentioned it commonly occasions distressing sensations to patients. But its most injurious effects are to patients who from unconsciousness or extreme exhaustion cannot express the injury thus occasioned them—the dying, and those in imminent danger of death. Many, very many lives, I have no doubt, are sacrificed to this pernicious custom; and, in a great proportion of cases, it renders the last moments of life more distressing, and hastens death. When the system is struggling in agony to sustain the respiration, and nature is almost exhausted, the deteriorated air occasioned by surrounding, anxious, sympathizing friends, may turn the scales in which life and death are so equally balanced.

In severe paroxysms of dyspnoea and asthma patients commonly feel the necessity of free ventilation; and in phthisis I have had many patients insist on having the windows and doors of their rooms kept open, even in the coldest weather of winter. Such cases show the importance of attending to this subject, in the low critical stages of other diseases; and as a general rule, in such cases, I would advise that a room should be freely opened, while, if the weather is cold, the body is protected



with warm but light clothing ; and no persons should be in the room, excepting such as are required to attend the patient.

5th. *Remedies which obviate mechanical impediments to the respiration.*

This indication is sometimes very important in the treatment of diseases attended with deficient respiration. The various mechanical impediments to the respiratory motions, adverted to in a former part of this essay (page 241), should receive careful attention and be obviated if practicable. If, for instance, the respiratory motions are obstructed by water collected within the pleura or peritoneum, calomel, elaterium, digitalis, and other remedies of this class will be appropriate.

One of the most common mechanical impediments to the respiration, in the low stages of typhous and typhoid diseases, is tympanitic distension of the intestinal canal. For this affection various remedies are used, as ether, camphor, capsicum, the pungent aromatics, and the introduction of a flexible tube per anum ; but there is no remedy which I have found so commonly efficacious as the nitrate of silver, exhibited in doses of gr. 1-8 or gr. 1-4, every hour or once in two hours.

In dyspepsia, hypochondria, phthisis, delirium tremens, and other diseases attended with deficient respiration, injury is often occasioned by tight dress, which confines the motions of the chest.

In dyspnoea, asthma, phthisis, and other diseases, patients frequently complain of inconvenience from the weight of bed clothes. In the low stages of pneumonitis, typhus, and in general when there is extreme exhaustion, with laborious, imperfect respiration—as in the dying—the bed clothing should be of the lightest fabric ; and in many cases it is desirable that the clothing should be supported by the hand of an attendant, so as to prevent its pressure on the body of the patient. Under such circumstances, a slight impediment, which in health would occasion no inconvenience, may prove a fatally oppressive load to the system exhausted by disease.

6th. *Remedies which excite secretions vicarious of respiration.*

The bronchial membrane, the liver, skin, kidneys, salivary glands, and the uterus and mammary glands in females—all the secernent organs—are to some extent vicarious in their functions.

*The menstrual secretion* has an important relation to the respiratory function. In cases of oppressed and deficient respiration, it is not uncommon that this secretion occasions immediate and decided relief.

In some cases of general exhaustion, as in advanced stages of phthisis, it is generally considered as desirable that this secretion should be suspended. The utility of this suspension appears, however, to depend upon other circumstances than simple exhaustion. If with much exhaustion there is a frequent, quick, and irritative pulse, a florid skin, natural wakefulness, and other indications of perfect arterialization of the blood, a continuance of the menstrual secretion is injurious. On the contrary, if the pulse, whether frequent or infrequent, is oppressed ; if the lips, the finger nails, and the surface generally, have a livid tinge ; if there is a disposition to drowsiness with occasional vertigo and tinnitus aurium ; if the exhaustion is complicated with torpor—a torpor occa-

sioned by imperfect respiration—if such are the permanent prevailing symptoms, the menstrual secretion commonly has a favorable effect, and rarely fails to afford at least temporary relief.

I apprehend that the injurious effects of morbidly excessive menstruation have rendered many practitioners over-cautious in regard to the debility which this natural drain of the system is supposed to occasion.

A similar remark appears applicable in reference to the function of *lactation*. Excessive lactation is exhausting; and should be cautiously avoided in the low stages of fever, in phthisis, and other diseases attended with much debility. Yet a sudden suppression of the milk is almost sure to occasion unpleasant nervous symptoms, with oppressed respiration; and in typhous and typhoid fevers, and in some cases of phthisis—notwithstanding a considerable degree of exhaustion—if the prominent symptoms are connected with oppression of the respiratory and cerebral functions, the secretion commonly should be encouraged.

*The skin* is well known to perform an office in some degree vicarious of respiration. If the cutaneous secretion is checked, the respiration becomes hurried and laborious; and in cases of oppressed respiration a free perspiration often produces decided relief. These circumstances clearly indicate the importance of attending to the skin, in disorders of the respiratory function. Caution is required, however, in case of disparity between the respiratory and circulating functions, that the remedies exhibited to act on the skin, do not excite arterial action, and thus increase this disparity. Through neglect of this caution, much injury is done by the hot drinks, the external heat, and the general stimulating regimen, commonly employed in domestic and empirical practice, to “sweat” or “steam” a patient, in the commencement of any febrile disease.

*The liver* also performs an important similar vicarious office. The green discharges, produced by increased action of the liver, which attend a favorable crisis in cholera, are an example of the agency of this organ in depurating the blood. So in congestive fevers free bilious evacuations are almost invariably accompanied with a relief of the subsultus, stupor, coma, livid skin, and other symptoms of imperfect respiration.

Of the remedies which act upon this organ, and thus obviate the effects of imperfect arterialization of the blood, *calomel* is the most important. This remedy, a notice of which has been deferred for this place, on account of its operation on the liver, is one of the most important of the class of remedies, before adverted to, which operate to *excite and invigorate the arterializing nerves*. It appears, indeed, to have an exciting operation on all the organs supplied by the great sympathetic nerve; and hence it produces a general effect on the secretions of the system. Its operations on the liver, the mucous membranes, the skin, and the salivary glands, are well known; and most practitioners must have noticed the relief afforded by calomel in cases of cerebral and general nervous oppression—subsultus, stupor, coma, muttering delirium, &c.—symptoms which, as I have endeavored to show, are commonly connected with imperfect respiration.

## CHLORIDE OF SODA—A REMEDY FOR POISONING.

*To the Editor of the Boston Medical and Surgical Journal.*

SIR,—It may not be amiss, particularly at this season of the year, to call the attention of your medical readers to the use of the chloride of soda in cases of poisoning with rhus radicans or poison ivy. In No. 22, February, 1833, of the American Journal of the Medical Sciences, a case is related in which the left arm and both legs were very tensely swollen, and their surface strongly resembled the denuded surface of a blister, scald, or burn, in a suppurating state, and in which the soda was directed as follows. R. Soda chlorid., 3iss.; aquæ, 3 viij. M. ft. solut. The inflamed parts were first washed in Castile soap and water, and then cloths dipped in the solution were kept constantly applied; and the patient was to take a cathartic of sulph. magnesia. On the second day the eruption was dried up and the patient nearly well.

The following case will serve to substantiate the claims of the soda to further trial. May 2d. J. F., adult, while at work exposed to poison ivy, cut his leg midway the tibia, to which he applied adhesive plaster, and continued at work through the day.

12th. Wound not disposed to heal; eruption under the plaster at first, but now extends nearly the whole length of the tibia. Applied ung. digest. to the wound, and a weak aqueous solution of acet. plumbi to the eruption, and gave sulph. magnesia as cathartic.

16th. Eruption extended to the scrotum, attended with a thin colorless discharge and great irritation. Applied aqueous solution of opium and ung. acet. plumbi; has taken sulph. magnes. every day.

17. The eruption completely covers the face, trunk, and extremities, attended with a discharge from the chin, scrotum, and thighs, where it lies in contact, and from the leg where it first commenced; penis swelled irregularly, in its general appearance resembling anasarca; great restlessness, pulse 120, tongue slightly furred. Discontinued former medicines, excepting the salts. Sponged the whole body with chloride of soda, one part to eight parts of tepid water, by which immediate relief was obtained from the severe itching and burning; applied a cloth wet in the same to the penis and scrotum, and another to the leg.

18th. More comfortable, discharge less. Continue sponging six or eight times a day.

19th. No discharge, swelling gone, and the general eruption faint. Continue sponging occasionally. Patient about house.

20th. Disappeared, excepting on the fore arms. Continue treatment.

If the chloride of soda is applied full strength, it will produce a discharge; consequently the strength of the solution should be regulated according to the irritability of the surface. It will be perceived that it was used much stronger in this case than in that taken from the American Journal, but the surface was different, the discharge being in this case an oozing from the heads of the pimples.

I hope further experiments will be communicated from an abler source. The above is of course at your disposal.

South Berwick, Me., May 24th, 1838.

Respectfully yours,

EMMA BATLETT, JR.

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 BOSTON, JUNE 13, 1838.
 

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## ROCKET TRUSS.

BELIEVING it the best mode of ascertaining the exact value of this instrument, the invention of Mr. T. Corbett, of the Canterbury, N. H. Shaker community, it was placed in the hands of a professional friend who is a host in these matters. With his accustomed candor, he returned the truss with the following accompaniment. "It strikes me that if it contains any advantages over those in common use, a serious objection to its construction is its vibrating neck." Further, he seems to believe that it lacks retentive power—without which no truss can be essentially serviceable. Not satisfied with this decision, other gentlemen, conversant with hernial apparatus, were invited to examine the Shaker truss. While some discover in its mechanical simplicity many excellences, others view the rocking pad with perfect alarm. With these conflicting testimonies, it is scarcely possible to obtain a just decision at present. One thing is certain; Dr. Mussey, of Hanover, and Dr. Twitchell, an eminently distinguished operator of Keene, N. H., speak unhesitatingly of its merits. For ourselves, we should be quite contented with any opinion those gentlemen might advance, pro or con, in surgery. Thus far no opportunity has been offered in Boston, to give Mr. Corbett's invention a reasonable trial, and hence our surgeons are unwilling to sound his praises at the onset. He may rely upon our impartial decision in time. It would be well to supply the druggists—and, above all, get Dr. Leach to make a fair trial with it on some of those formidable ruptures in which he is so frequently consulted. Whenever any facts of interest are developed, touching its efficacy, Mr. Corbett shall certainly reap all the advantage arising from their promulgation. At all events, the ingenuity manifested in the working pad, shows that the profound attention of the contriver was directed to the consideration of relieving the unfortunate from the



pains and perils incident to hernia. A front and back view of the instrument are here given.

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*What is Thirst?*—Such is the title of a small tract sent to this Journal, purporting to belong to a series on health, of which this is the third number. The author has evidently achieved a distinction of which he is decidedly proud—"So that now he has very rarely a desire to take any kind of drink—even pure water." Verily, we are approaching a dietetic millennium, it being finally discovered that water was only designed for floating ships, steamboats, saw-mill logs, and fishes. We look back with astonishment upon the stupid ignorance of our forefathers, who were nurtured in the pernicious error that water was made for quenching thirst. The revivification of a parched corn diet, chesnut puddings, and a macadamised bed, the burden of these rag-fair productions, thus far, have only excited a pleasant merriment; but if the monomaniac writer

were only invested with supreme authority for half an hour, the first exercise of his power would be to cut off every man's head who presumed to eat, drink or sleep according to his own personal views of comfort.

We advocate the cause of temperance, and glory in the moral revolution which is going on throughout the civilized world; but we are disgusted with that hypocrisy which, under the semblance of unbounded philanthropy, shows itself in one everlasting lamentation because all christendom does not instantly return to savage life.

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*Hints for the Young, &c.*—Weeks, Jordan & Co. have republished from this Journal a small treatise of sixty pages, entitled "Hints to the Young, on a subject relating to the HEALTH OF THE BODY AND MIND, with additions, by the author." At the time the chapters appeared in our pages, they were extensively circulated and read with deep interest by the profession. The object in collecting the whole into a compact pamphlet form, is that the melancholy facts there disclosed may reach those who would otherwise remain utterly ignorant of the various modes in which the mind is impoverished by solitary vices, and the body broken down in early life under the uncontrolled dominion of the passions. One single circumstance will recommend it to the intelligent reading, thinking community, had it no other merit—viz. Dr. Woodward, of the Insane Hospital at Worcester, is the author.

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*A Singular Accident.*—On the 29th of May, a child, three years old, residing in this city, swallowed an open, tortoise-shell-handled penknife, with a steel blade—in the whole, measuring two inches and five eighths in length,—which passed safely through the intestinal tube in fifty-one hours. The child was not, to the knowledge of the family, in the least degree disturbed by the presence of the instrument, nor is there any reason for supposing that the stomach or bowels have been injured in any manner whatever by the rapid progress of an open blade through a tract of eight times the length of the child's body.

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*Copland's Dictionary.*—A second volume of this highly prized work was delivered to the fellows of the Massachusetts Medical Society, at their last anniversary. Nothing having been said to the contrary, it is presumed that the third will be delivered next year. It should be repeated, again, that the publishing committee were never blameable for the tardy manner in which the parts of the dictionary have appeared.

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*Vacant Professorships.*—It is pretty certain that several new appointments must necessarily take place in two of the New England schools of medicine, between this and autumn. The question arises—who are best qualified to discharge the duties?

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*Hook-Swinging in India.*—Notwithstanding the violence done the dorsal muscles by thrusting a large hook into the flesh, each side of the spine, by which the body is suspended a considerable time to appease the goddess over smallpox and cholera, there is no evidence that the devo-

tees are permanently injured by the operation. Mr. Tracy, of the missionary service, not long since, was present at one of these terrible exhibitions at Madras—from whence he wrote the following particulars. “The hooks, which were six inches long, were inserted in the backs of the victims, for so I must call them, before leaving the temple, after the back had been smartly beaten for some time by a strong man. One hook was inserted on each side of the back bone, a little below the shoulders, and took up an inch and a half of flesh. After the hooks were inserted, they made a circuit around the pole, to be seen by the people. Several appeared to be under the influence of some intoxicating drug. As I stood near the pole, I could observe every change of countenance. Some were evidently alarmed and suffered a good deal: others were perfectly reckless; one or two held with their hands by a rope which hung before them, nearly all the time they were swinging; while one or two others threw themselves loose, tossing about their legs and arms as if desirous to show how little they suffered. While suspended in the air, they scattered fruits and flowers over the heads of the people, who seized them as most precious relics. One man, in addition, beat upon a tom-tom, and another fired off a musket several times as he made his circuit through the air. They were elevated thirty or forty feet from the ground. No blood flowed, except in one instance, and that was considered by the people as a real miracle.”

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*Pneumonia in Children.*—When pneumonia attacks children after the age of six years, the prognosis is usually very favorable; the disease (if without complication) is rarely fatal. Careful observations made at the *Enfants Malades*, Paris, show that the mortality rarely exceeds one in forty.—*London Lancet*.

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*Rupture of the Inferior Vena Cava.*—A man, 30 years of age, had suffered under repeated attacks of hæmoptysis during his youth; for the last eighteen years he also had been affected with hæmorrhoids, and a varicose state of the veins of the foot, which gradually reached those of the thigh and inguinal region. About three or four weeks before his death, the patient labored under a low fever, with intermitting type, from which he had nearly recovered, when, on the fourth day before his decease, he was suddenly seized with a sense of anxiety and oppression about the breast, accompanied by vomiting and purging; these symptoms gradually declined, and the patient seemed to be in a fair way for recovery, when he was again suddenly attacked by violent pain in the right lumbar region, with oppression and urgent necessity for free air, &c. Convulsions soon set in, and the man died in four hours.

Some traces of chronic inflammation were found in the lungs; the right auricle of the heart was considerably enlarged, while, at the same time, its parietes were much thinner than is seen in the natural state; the right ventricle was also thinner than it should have been. The pericardium contained about two spoonfuls of clear serum. The liver was very dark colored, soft, and full of blood; the vena portarum was enlarged, and spleen was at least twice its natural size. The whole of the abdominal venous system was also remarkably enlarged; the right lumbar and inguinal regions contained a large quantity of coagulated blood, and



on a careful examination being made, the point of hæmorrhage was traced to the inferior cava, near the junction of the iliac vein.

This part of the vessel was remarkably enlarged, and perforated with several openings about the size of pins' heads. The parietes of the vessel did not appear to be thinned, although the enlargement comprehended the entire calibre.—*Berlin Med. Zeit.*

*Results of Poisoning by Sulphuric Acid.*—At a meeting of the Royal Medical and Chirurgical Society, London, Dr. John Wilson describes the condition of the œsophagus in a patient who died 45 weeks after having swallowed a considerable quantity of sulphuric acid. The history of this case had been previously detailed in a paper read at the College of Physicians in July, 1834, the patient being then alive, at which time a cylindrical tube, eight or nine inches in length, which had been ejected by a violent fit of coughing, was laid on the table. At that time the patient had survived the injury six months, and was soon afterwards discharged from the hospital, in a great measure recovered. She was admitted, however, in the following September, much reduced, and, after very great suffering, died on the 17th November. On examination, post mortem, the lower two-thirds of the œsophagus were thickened and narrowed, and very vascular, and softened internally; the upper third of the tube shone like an old cicatrix. In the stomach opposite to the spleen was an opening of the size of a half crown, with softened edges; and the abdomen contained a quantity of dark-colored fluid, but no signs of inflammation. Preparations of the ejected tubular membrane of the œsophagus were exhibited to the Society. A colored model was also exhibited, to the meeting, of the stomach of another patient, who had died 22 hours after swallowing two or three ounces of sulphuric acid, which had remained in the stomach a quarter of an hour. The lining of the mouth, pharynx, and œsophagus in the latter case was of a silvery-grey speckled appearance, like a snake's skin, and the lining membrane of the stomach was coated with a black pitch-like substance, which did not easily wash off, but which, when scraped off, left the membrane entire.—*London Lancet.*

*Notice of the Bafureira of Cape de Verd, by Dr. B. A. Gomes.*—This plant is indigenous at Cape Verd, and is employed by the inhabitants of the Cape Verd Islands, and the coast of Africa, to increase the secretion of milk. The writer has been assured by persons whom he thinks worthy of credit, that, not only is it efficacious for this purpose in women who have been recently confined, but that it produces the secretion in virgins and persons of advanced life; so that infants have been nursed for a long time by females who, from their age and other circumstances, could not have furnished the secretion under the influence of any natural stimulant. Its mode of employment is by means of poultices, made of the green leaves, applied to the mammæ; or a strong decoction, with which the same parts and external organs of generation are washed. Sometimes such a decoction is taken internally, conjointly with its external application. The plant belongs to the family *Euphorbiaceæ* and the genus *Ricinus*. The writer is doubtful whether it is a variety of the *Ricinus communis*, or a distinct species. It has been raised in the garden of the Marine Hospital at Lisbon, from seeds sent from Cape Verd.—*British and Foreign Medical Review.*

**TO CORRESPONDENTS.**—The papers of Dr. Trowbridge on gun-shot wounds, Dr. Sugg on a case of vaginal tumor, and Dr. Howe on one of fungus hæmatodes, will be inserted in their turn.

Whole number of deaths in Boston for the week ending June 9th, 58. Males, 15—Females, 13.  
Consumption, 4—Infantile 2—Tumor, 1—scarlet fever, 3—dys, 1—typhous fever, 1—menstrue, 1—convulsions, 1—stoppage in the bowels, 1—old age, 1—cancer, 1—Inflammation of the bowels, 1—croup, 1—erysipelas, 1—poison, 1—diabetes, 1—stillborn, 2.

### MEDICAL LECTURES.

THE Medical Lectures at Hanover, N. H., will commence on Thursday, the 2nd of August next, and continue thirteen weeks.

Anatomy, Surgery and Obstetrics, by	R. D. MUSSEY, M.D.
Physiology, Materia Medica and Medical Jurisprudence, by	DANIEL OLIVER, M.D.
Theory and Practice of Physic, by	J. DELAMATER, M.D.
Chemistry and Pharmacy, by	O. F. HUBBARD, M.D.
Demonstrations in Anatomy, by	NOAH WORCESTER, M.D.

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June 1, 1858.

J13—sep31

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J13—11

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